



PATENT APPLICATION

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re the Application of

Ryuichi KOJIMA et al.

Group Art Unit: 2861

Application No.: 10/715,499

Examiner: L. NGUYEN

Filed: November 19, 2003

Docket No.: 117804

For: DROPLET EJECTING HEAD AND DROPLET EJECTING APPARATUS

PRE-APPEAL BRIEF REQUEST FOR REVIEW

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Sir:

After entry of the Notice of Appeal filed herewith, Applicant respectfully requests review of the Final Rejection mailed April 25, 2006, in the above-identified application. No amendments are being filed with this request.

I. Status of Pending Claims

Claims 1-15 and 17-20 are pending. Claims 6 and 12 are objected to only for being dependent from a rejected base claim, but are otherwise allowable. Claims 1-5, 7, 9-11, 13, 15, 17, 18 and 20 and 19 are rejected.

The April 25, 2006 Office Action indicates the status of claims 8 and 14 as rejected. However, no rejection of claims 8 and 14 is provided.

II. Grounds of Rejection Presented For Review

The following grounds of rejection are presented for review: claims 1, 2, 4 and 19 are rejected under 35 U.S.C. §102(a) over U.S. Patent No. 6,923,521 (Bates); claim 3 is rejected under 35 U.S.C. §103(a) over Bates in view of U.S. Patent No. 6,742,866 (Anderson);

claims 5, 7 and 9 are rejected under 35 U.S.C. §103(a) over Bates in view of U.S. Patent No. 6,595,614 (Morikawa); and claims 10, 11, 13, 15, 17, 18 and 20 are rejected under 35 U.S.C. §103(a) over Morikawa in view of Bates and Anderson.

Claims 1, 2 and 10 are the independent claims.

Claim 1 recites "the ejectors are arranged such that, when dots of the droplets ejected on the recording medium are viewed in a main scanning-orthogonal direction, which is orthogonal to the main scanning direction, the sizes of dot diameters are changed at random." (emphasis added).

Claim 2 recites "the ejectors are arranged such that, when the ejectors are viewed in order in the main scanning-orthogonal direction, which is orthogonal to the main scanning direction, positions of the ejectors in the main scanning direction alternate in an offsetting manner, such that sizes of dot diameters of droplets from the plurality of ejectors is changed at random." (emphasis added).

Claim 10 recites "wherein the ejectors are arranged such that, when dots of the droplets ejected on the recording medium are viewed in a main scanning-orthogonal direction, the sizes of dot diameters are changed at random." (emphasis added).

Accordingly, each of claims 1, 2 and 10 recite that the ejectors are arranged such that the sizes of dot diameters are changed at random. At least these features are not disclosed or taught by the applied references of record.

The April 25, 2006 Final Rejection cites Fig. 11 of Bates and asserts that Bates discloses, large drops represented by large circles that are disposed in a random fashion. Applicants respectfully disagree.

Contrary to the assertions made in the April 25, 2006 Final Rejection, Bates fails to disclose that the large circles are disposed in a random fashion. In fact, the figures and specification of Bates require specific dimensions between each of the dots and require a

particular arrangement of the dots. Furthermore, Bates fails to disclose that random changes of droplet size are achieved by a specific arrangement of the nozzles.

With reference to Fig. 11 of Bates, Bates discloses:

The numbers inside the circles in FIG. 11 refer back to FIG. 6. A single number inside two concentric circles indicates that the number applies to both circles. When there are two numbers, the number inside the small circle identifies the small circle and the number outside the small circle identifies the large circle. The vertical pattern of pixel locations is reflective of the fixed relationship between small and large nozzles in the printhead which forces a small drop to be located 1/600 inch vertically from a large drop and vice versa. Thus, in order to minimize the number of passes required to place all of the drops, each small drop pixel location is separated from at least one large drop pixel location by {fraction (1/600)} inch in the vertical direction, and each large drop pixel location is separated from at least one small drop pixel location by {fraction (1/600)} inch in the vertical direction. Moreover, each pixel location that can receive a small drop and/or a large drop is separated from at least one other pixel location that can receive a small drop and/or a large drop by {fraction (1/600)} inch in the vertical direction. All three of these types of pixel locations are intermixed with each other in the matrix. Also, the three types of pixel locations are alternatingly aligned in each horizontal row of the matrix. That is, each pixel location is separated from another pixel location of its own type by three pixel locations in the horizontal direction. Printhead 26 is used to jet ink onto the matrix of pixel locations (Step S304). The particular arrangement of pixel locations shown in FIG. 11 is simple to implement and spreads the pixel locations horizontally as evenly as possible. (emphasis added).

See col. 9, line 42 to col. 10, line 3 of Bates.

Based on this disclosure of Bates, the vertical pattern of small circles and large circles is reflective of the fixed relationship between the small and large nozzles in the printhead. This is clearly not a disclosure of sizes of dot diameters (i.e., small and large circles) that are changed at random, as recited in claims 1, 2 and 10. Bates further discloses that some pixel locations can receive both a large dot and a small dot, some pixel locations can receive only a large dot, and other pixel locations can receive only a small dot. See col. 9, lines 33-41 of Bates. Here, Bates is disclosing only two sized dots, a large dot and a small dot, and not that the sizes of the dot diameters are changed at random.

Furthermore, according to Bates, the sizes of droplets are changed by nozzles having different sizes, not that random changes of droplet size are achieved by arrangement of the nozzles.

Anderson and Morikawa fail to cure the deficiency discussed above with respect to Bates.

For the foregoing reasons, claims 1, 2 and 10, as well as claims depending therefrom, are not anticipated or rendered obvious by Bates, Anderson and Morikawa, in any combination.

III. Conclusion

For all of the reasons discussed above, it is respectfully submitted that the rejections are in error and that all the pending claims are in condition for allowance. For all of the above reasons, Applicant respectfully requests the panel of Examiners to review the April 25, 2006 Final Rejection prior to Appeal and to withdraw the rejection.

Respectfully submitted,



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Attachment:

Notice of Appeal and Petition for Extension of Time

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